

DEPARTMENT OF TRANSPORTATION**DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch

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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-000620**Date Inspected:** 16-Sep-2007**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1600**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Lu Jian Ping**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Tower Mock-up 77M and 114 M**Summary of Items Observed:**

CALTRANS Quality Assurance (QA) Inspector, Alfredo Acuna was present for the fabrication of the Mock-up 77 and 114 meter elevations scheduled for this project at the ZPMC facility in Shanghai, China for the San Francisco Oakland Bay Self Anchored Suspension Bridge.

Tower Mock-up 77 Meter Elevation

ZPMC, welders Zhan Binghua and Li Mingyang were observed by the QA Inspector performing welding operations on the skin panel A and E.

Mr. Zhan was observed performing weld repairs at the junction of the mp1 to skin panel A, joint # 1 following the approved welding procedure specification WPS-345-FCAW-1G-Repair. Base metal was designated as A-709 Grade 50. ZPMC was using the flux cored arc welding gas(FCAW-G) process in the flat(1G) position with a 1.4 mm diameter electrode designated as E71T-1 /AWS A5.20, brand name Supercored. The QA Inspector verified amperage, voltage, travel speed, preheat and heat interpass temperatures for the filler passes. The QA inspector found that the welding parameters recorded after ZPMC approved Certified Welder Inspector Ye Yong Jun and CAWI Zhu Zhong Hai appeared to be in accordance with the contract documents.

Mr. Li was observed performing the weld repairs at the junction of the mp7 to skin panel E.

The QA inspector had a conversation with ZPMC QA inspector Li Xiu Yang and ABF representative Huang Li with Bureau of Veritas regarding the base metal repair located at approximately 0 to 3 mm from the weld, Tower Mock-up 77 meter elevation, lower diaphragm SA-95. The QA inspector asked ABF representative if ZPMC was going to perform UT examination on the base metal repair that ZPMC found with MT examination by the weld.

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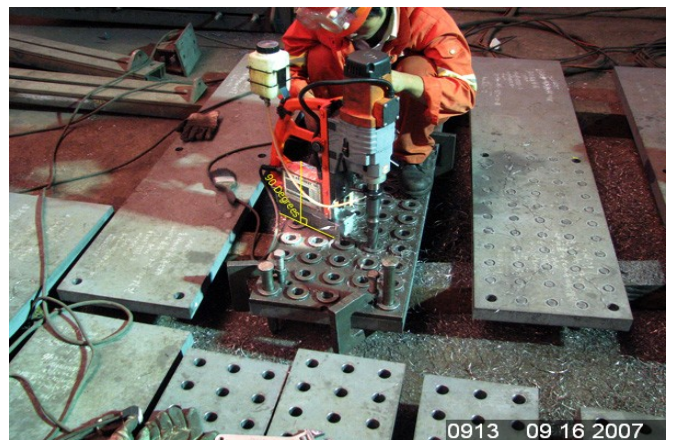
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The ABF representative Mr. Huang relayed that he was not aware that ZPMC needed to perform UT examinations in base metal repairs that were found with MT. The QA inspector suggested to Mr. Huang that even though ZPMC performed NDT with the same method which ZPMC found the indication, the repair area needed to be ultrasonically tested because ZPMC made the base metal repair by the weld and the heat cycle could possibly contribute to an increase in the size of any indication at this location. The QA inspector suggested to the ZPMC and ABF representative that they should consult with their supervisors. Mr. Li and Mr. Huang relayed to the QA inspector that they would discuss this issue with their Supervisors. After the end of the shift, ZPMC and ABF representatives relayed to the QA inspector that ZPMC agreed to perform UT at the location where ZPMC repair the base metal indication by the weld metal.

Tower Splice Mock-up 114 Meters Elevations

ZPMC, welder Ye Bing was observed by the QA Inspector performing welding operations on the skin panel A at the junction of the longitudinal stiffener mp1001, joint # 4. Mr. Ye was following the approved welding procedure specification WPS-B-T-2332-TC-U5-F. Base metal was designated as A-709 Grade 50. ZPMC was using the flux cored arc welding(FCAW) process in the horizontal (2G) position with the 1.4 mm diameter electrode designated as E71T-1 /AWS A5.20, brand name Supercored. The QA Inspector verified amperage, voltage, travel speed, preheat and heat interpass temperatures for the filler passes. The QA inspector found that the welding parameters recorded after ZPMC approved Certified Welder Inspector Lu Jian Ping appeared to be in accordance with the contract documents.

Item	Description	WBS	Dwg No.	Status
2	Drilling operations Tower Mock-up 114 Longitudinal Stiffeners			
	The QA inspector observed ZPMC performing drilling operations to the longitudinal stiffeners. The QA inspector observed that the material removed by drilling operations was not being cleaned from the steel before ZPMC operators moved the magnetic portable driller to another location.			
	The QA inspector had a conversation with the ZPMC QA inspector Li Xiu Yang. The QA inspector asked Mr. Li how ZPMC was preventing that the residues from the drilling operations were not going in between the piece to be drilled and the magnetic portable driller. Mr. Li questioned ZPMC production personnel prior to responding back to the QA inspector. Mr. Li relayed to the QA inspector that when the material was trapped in between the piece and the driller, the magnetic support from the driller was not going to be stable and then the operator would clean the surface. The QA inspector did not observe any deviation which indicated a lack of perpendicularity of the drill bit at this time. The QA inspector recommended to Mr. Li to maintain a true perpendicularity in between the pieces and the portable magnetic driller by maintaining clean surfaces and perpendicularity as per contract documents.			



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3 Magnetic particle Testing (MT)

Tower Mock-up 77 Meters Elevation

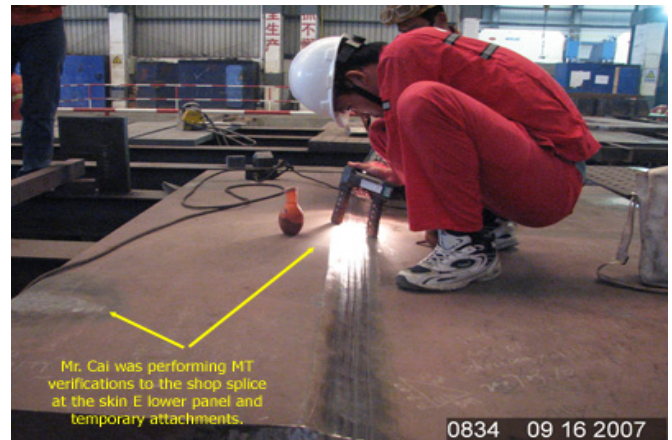
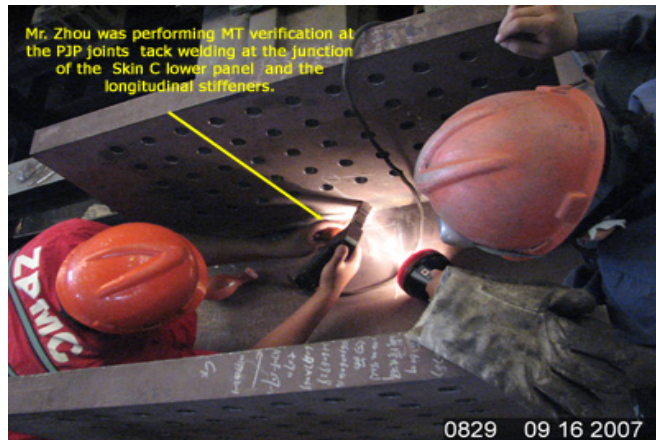
The QA inspector observed approved MT ASNT Level II technician Cai Xin Xin performing MT verifications at base metal weld repair at lower diaphragm SA-195 shop splice. The QA inspector observed that Mr. Cai's MT verifications appeared to be in compliance with the Contract documents.

Tower Splice Mock-up 114 Meters Elevation

The QA inspector witnessed ZPMC performing MT on cover passes of weld joint 5 and 6 at the skin E lower panel and areas where temporary attachments were removed. The QA inspector observed MT ASNT Level II technician Cai Xin Xin performing MT verifications. The QA inspector observed that Mr. Cai's MT verifications appeared to be in compliance with the Contract documents.

The QA inspector performed 10 % MT verification on the cover passes from the skin lower panel E weld joint # 5 and 6. The QA inspector observed that the weld examined appeared to be in accordance with the contract documents. See TL 6028 generated on this date.

The QA inspector witnessed ZPMC performing MT on the tack welds at the junction of the skin C lower panel to the longitudinal stiffeners joints # 6, 7, 9, 10, 12 and 13. The QA inspector observed MT ASNT Level II technician Zhou Dongyun performing MT verifications. The QA inspector observed that Mr. Zhou's MT verifications appeared to be in compliance with the Contract documents.



Summary of Conversations:

As noted above.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By: Acuna, Alfredo

Quality Assurance Inspector

Reviewed By: Cuellar, Robert

QA Reviewer